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Applicant(s): John M. Monk
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Title: SYSTEMS AND METHODS FOR CHARACTERIZING PACKET-SWITCHING NETWORKS

APPEAL BRIEF

Honorable Assistant Commissioner for Patents
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Sir:

In connection with the Notice of Appeal dated January 15, 2008, Applicant provides the following Appeal Brief in the above-captioned application.

1. Real Party in Interest

The real party in interest as assignee of the entire right and title to the invention described in the present application is Agilent Technologies, Inc., having a principle place of business at 5301 Stevens Creek Blvd, Santa Clara, CA USA.

2. Related Appeals and Interferences

There are no known related appeals or interferences at this time.

3. Status of the Claims

Claim 1-24 are pending in this application. No claims are withdrawn from consideration. Claims 1-24 are the subject of the present Appeal. Claims 1-24 are finally rejected, and are duplicated in the Appendix.

4. Status of the Amendments

A final Office Action on the merits was mailed on October 15, 2007. An Appeal Brief was filed and in response thereto, an Office Action was mailed on July 24, 2008. There are no pending amendments with respect to this application.

5. Summary of the Claimed Subject Matter[1]

In accordance with an embodiment, a packet-network analyzer system (Fig. 1, 100), including a host analyzer (Fig. 1, 105) communicatively coupled to a first client analyzer (Fig. 1, 110), wherein the host analyzer (105) incorporates a neural processing module (Figs. 4 and 6, 410) to process raw digital data provided to the host analyzer (105) by the first client analyzer (110) for characterizing a packet-network-under-test (Figs. 1, 120) that is connected to the first client analyzer (110). (Kindly refer to

[1] In the description to follow, citations to various reference numerals, drawings, and corresponding text in the specification are provided solely to comply with Patent Office rules. It is emphasized that these reference numerals, drawings, and text are representative in nature, and not in any way limiting of the true scope of the claims. It would therefore be improper to import anything into any of the claims simply on the basis of illustrative language that is provided here only under the obligation to satisfy Patent Office rules for maintaining an Appeal.

paragraphs [0023] through [0024], paragraph [0026], paragraph [0033], paragraphs [0036] through [0038], paragraphs [0041] through [0042], as well as claim 1, Figs. 1, 2, 4 and 6, for further details.)

In accordance with another embodiment, a method (Fig. 8) for analyzing a packet-network-under-test (Fig. 1, 120; Fig. 2, 235) includes receiving raw digital data (Fig. 8, 805) that is derived from a packet-network-under-test; generating a selected data set from the received raw digital data (Fig. 8, 810); generating a normalized data set from the selected data set (Fig. 8, 815); and processing the normalized data set in a neural network to generate a set of rules and relationships (Fig. 8, 820). The method also includes using the set of rules and relationships for mining the selected data set to generate a mined data set (Fig. 8, 825); and using the mined data set to characterize the packet-network-under-test (Fig. 8, 830). (Kindly refer to paragraphs [0036] through [0038], paragraphs [0041] through [0042] and paragraph [0052], as well as claim 11, Figs. 1, 2, 4, 6 and 8, for further details.)

In accordance with another embodiment, a packet-network analyzer system (Fig. 1, 100; Fig. 2, 200; Fig. 7, 105) stored on a computer-readable medium (Fig. 7, 705, 707, 720) includes logic configured to receive raw digital data that is derived from a packet-network-under-test (Fig. 4, 425; Fig. 7, 720; Fig. 8, 805); logic configured to generate a selected data set from raw digital data of the packet-network-under-test (Fig. 4, 420; Fig. 7, 730; Fig. 8, 810); logic configured to generate a normalized data set from the selected data set (Fig. 4, 415; Fig. 7, 733; Fig. 8, 815); and logic configured to process the normalized data set in a neural network to generate a set of rules and relationships (Fig. 4, 410; Fig. 6, 610, 615; Fig. 7, 732; Fig. 8, 820). The packet-network analyzer also includes logic configured to use the set of rules and relationships for mining the selected data set to generate a mined data set (Fig. 4, 405; Fig. 7, 731; Fig. 8, 825); and logic configured to use the mined data set to characterize the packet-network-under-test (Fig. 4, 405; Fig. 7, 731; Fig. 8, 825). (Kindly refer to paragraphs [0036] through [0038], paragraphs [0041] through [0042], paragraphs [0047] through [0049], paragraph [0050], and paragraph [0052], as well as claim 17, Figs. 1, 2, 4, 6 7 and 8, for further details.)

In accordance with another embodiment, a packet-network analyzer system (Fig. 1, 100; Fig. 2, 200; Fig. 7, 105) stored on a computer-readable medium (Fig. 7, 705, 707, 720) includes means for receiving raw digital data that is derived from a packet-network-under-test (Fig. 4, 425; Fig. 7, 720; Fig. 8, 805); means for generating a selected data set from raw digital data of the packet-network-under-test (Fig. 4, 420; Fig. 7, 710, 730; Fig. 8, 810); means for generating a normalized data set from the selected data set (Fig. 4, 415; Fig. 7, 710, 733; Fig. 8, 815); and means for processing the normalized data set using a neural network to generate a set of rules and relationships (Fig. 4, 410; Fig. 6, 610, 615; Fig. 7, 710, 732; Fig. 8, 820). The packet-network analyzer also includes means for using the set of rules and relationships for mining the selected data set to generate a mined data set (Fig. 4, 405; Fig. 7, 710, 731; Fig. 8, 825); and means for using the mined data set to characterize the packet-network-under-test (Fig. 4, 405; Fig. 7, 710, 731; Fig. 8, 825). (Kindly refer to paragraphs [0036] through [0038], paragraphs [0041] through [0042], paragraphs [0047] through [0049], paragraph [0050], and paragraph [0052], as well as claim 21, Figs. 1, 2, 4, 6 7 and 8, for further details.)

6. Grounds of Rejection to be Reviewed on Appeal

The issues in the present matter are whether:

I. Claims 17-24 are properly rejected under 35 U.S.C. § 101 as being directed to non-statutory subject matter;

II. Claims 2-24 are properly rejected under 35 U.S.C. § 112, ¶ 1;

III. Claims 2-10 and 17-24 are properly rejected under 35 U.S.C. § 112, ¶ 2;

IV. Claim 1 is properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bonney, et al.* (U.S. Patent 7,096,264), *Bahadiroglu* (U.S. Patent Application Publication No. 2002/0186660) and *Barrillaud, et al.* (U.S. Patent No. 6,639,900);

V. Claims 2-3, 11, 17 and 21 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bonney, et al.*, *Bahadiroglu* and *Barrillaud, et al.* and *Durrant, et al.* (U.S. Patent 6,691,120); and

VI. Claim 4-5 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bonney, et al.*, *Bahadiroglu*, *Barrillaud, et al.*, *Durrant, et al.* and *Schmidt* (U.S. Patent Application Publication No. 2002/0049720).

VII. Claims 6-10 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bonney, et al.*, *Bahadiroglu*, *Barrillaud, et al.*, *Durrant, et al.* and *Schmidt* and *Adhikari et al.* (U.S. Patent Application Publication No. 2004/0252646).

VIII. Claims 12,18 and 22 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable over *Bonney, et al.*, *Bahadiroglu*, *Barrillaud, et al.*, *Durrant, et al* and *Adhikari et al.*

IX. Claims 19-20 and 23-24 are properly rejected under 35 U.S.C. § 103(a) as being unpatentable *Bonney, et al.*, *Bahadiroglu*, *Barrillaud, et al.*, *Durrant, et al., Adhikari et al.* and *Schmidt*.

7. Argument

In this portion of the Appeal Brief, arguments are provided. Notably, wherever applicable, Applicant maintains previous arguments for patentability provided in responses to Office Actions.

I. Rejections under 35 U.S.C. § 101

Claim 17 recites:

A packet-network analyzer system stored on a computer-readable medium, the analyzer comprising:

logic configured to receive raw digital data that is derived from a packet-network-under-test;

logic configured to generate a selected data set from raw digital data of the packet-network-under-test;

logic configured to generate a normalized data set from the selected data set;

logic configured to process the normalized data set in a neural network to generate a set of rules and relationships;

logic configured to use the set of rules and relationships for mining the selected data set to generate a mined data set; and

logic configured to use the mined data set to characterize the packet-network-under-test.

Applicant rely on recent precedent in support of their position that claim 17 qualifies as statutory subject matter. Notably, "The Supreme Court, however, has enunciated a definitive test to determine whether a process claim is tailored narrowly enough to encompass only a particular application of a fundamental principle rather than to pre-empt the principle itself. A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing... The machine-or-transformation test is a two-branched inquiry; an applicant may show that a process claim satisfies § 101 either by showing that his claim is tied to a particular machine, or by showing that his claim transforms an article." *In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (Emphasis added). In the present instance, the packet network analyzer system is tied to a packet-network-under-test (e.g., PNUT 120 shown in Fig. 1).

As described in the filed application, PNUT 120 is a generic representation of various types of packet-switching networks such as the Internet, a WAN, a LAN, or a subnet of the Internet. PNUT 120 may incorporate various types of network elements such as a PC, a switch, a router, a digital loop carrier (DLC), and transmission links that may include twisted-pair wires, co-axial cables, fiber-optic links, wireless links, and cellular links. As such, at least because the system and its constituent logic stored in a computer readable medium is tied to a network comprising various apparatuses, Applicant respectfully submits that claim 17 qualifies as statutory subject matter under Section 101 of the Code.

Claim 24 includes similar subject matter and is tied to a PNUT as well.

Therefore, Applicant respectfully traverse the rejection of claim 24 under 35 U.S.C. § 101 for at least the same reasons. Moreover, claims 18-23 and 25-26, which depend from claims 17 and 24, respectively, constitute statutory subject matter for at least the same reasons as claims 17 and 24.

II. Rejection of claims 2-24 under 35 U.S.C. § 112, ¶ 1

The Office Action rejects claims 2-24 as allegedly failing to comply with the enablement requirement. Specifically, the Office Action asserts that the 'normalization process' as described in the specification is described in general terms and does not comply with the requirement that the claimed subject matter must be described in the filed application in sufficient detail to enable one of ordinary skill in the art to make and use the invention without undue experimentation.

Claim 2 recites:

"a data processing element that processes the selected data set to generate a normalized data set;

Notably, other claims recite normalization of data. The Office Action alleges that the specification does not describe how to carry out the normalization process beyond simply selecting an upper bound and a lower bound for information. However, because the alleged shortcomings of each of the claims are not detailed, Applicant can only direct attention to the requisite support for normalization within the filed application.

The full scope of the claimed invention must be enabled. *See Auto. Techs. Int'l, Inc. v. BMW of N. Am., Inc.*, 501 F.3d 1274, 1285 (Fed. Cir. 2007). The rationale for this statutory requirement is straightforward. Enabling the full scope of each claim is "part of the *quid pro quo* of the patent bargain." *AK Steel v. Sollac* 344 F. 3d (Fed. Cir. 2003). A patentee who chooses broad claim language must make sure the broad claims are fully enabled. "The scope of the claims must be less than or equal to the scope of the enablement" to "ensure that the public knowledge is enriched by the patent specification to a degree at least commensurate with the scope of the claims." *Nat'l Recovery Techs., Inc. v. Magnetic Separation Sys., Inc.*, 166 F.3d 1190, 1195-96 (Fed. Cir. 1999). That is

not to say that the specification itself must necessarily describe how to make and use every possible variant of the claimed invention, for the artisan's knowledge of the prior art and routine experimentation can often fill gaps, interpolate between embodiments, and perhaps even extrapolate beyond the disclosed embodiments, depending upon the predictability of the art. *See Genentech, Inc. v. Novo Nordisk A/S*, 108 F.3d 1361, 1366 (Fed. Cir. 1997) ("[A] specification need not disclose what is well known in the art."); *see also Wands*, 858 F.2d at 736-37 ("Enablement is not precluded by some experimentation, such as routine screening.").

Applicant respectfully submits that the filed application describes normalization of data in detail and therefore, the rejection under this section and paragraph of the Code is improper. For example, paragraphs [0034] through [0036] describe normalization of raw digital data by the data processing element 415, and its use in the neural processing module 410.

> The data processing element 415 ***receives the selected subset of the raw digital data, and operates upon this subset to carry out functions such as filtering and normalization.*** The filtering function, which is one of several functions, may be carried out to improve the analysis efficiency by rejecting undesirable data bits in the selected subset. **Normalization is typically implemented to accommodate a wide range of dynamic values that may occur when selected subsets of data are obtained from multiple sources. For example, with reference to FIG. 2, host analyzer 105 may receive raw digital data from FCA 110 for characterizing packet network 240, and also raw digital data from SCA 220 for characterizing corporate WAN 235. If the parameter of interest in the raw digital data is the dropped packet rate, which as an example, may be 20 dropped bits in a million bits from FCA 10 and 600 dropped bits per kilobits from SCA 220, the two parameters may be converted into a common "normalized" rate of dropped bits per kilobit**, if such a rate is preferable for processing in the neural processing module 410.
>
> In more general terms, the normalization process specifies a lower bound and an upper bound of values for the parameter of interest in the subsets of data, such subsets having been received from one or more PNUTs that require characterization.
>
> Neural processing module 410 ***accepts the normalized subset of the raw digital data from data processing element 415 as its training input from which non-***

> ***obvious pattern sequences are to be identified, before extracting one or more rules and relationships information***. The extraction process uses neural network algorithms that glean information by fast adaptation and learning techniques. Neural processing module 410 will be explained in further detail using FIG. 6.

As such, while it is true that the middle paragraph above describes that normalization can generally be effected by specifying upper and lower bounds of values for parameters of interest in subsets of data, specific details, including an example of the normalization of data are provided in the captioned portion of the filed application, as well as in the description of other aspects of the embodiments. Accordingly, Applicant respectfully submits that the filed application does provide a description in sufficient detail that one of ordinary skill in the art could readily effect the normalization of data as claimed without resorting to undue experimentation.

Accordingly, and for at least the reasons set forth above, Applicant respectfully traverse the rejections of claims 2-24 for allegedly failing to comply with the enablement requirement of 35 U.S.C. § 112, ¶ 1.

3. Rejection of claims 2-10 and 17-24 under 35 U.S.C. § 112, ¶ 2

First, the Office Action rejects claims 2-24 as allegedly being indefinite "because it is unclear what is meant by the term normalized."

The second paragraph of § 112 requires the specification of a patent to "conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention." 35 U.S.C. § 112, P2 (2000). ***To satisfy this requirement, the claim, read in light of the specification, must apprise those skilled in the art of the scope of the claim.*** *See Miles Lab. v. Shandon, Inc.*, 997 F.2d 870, 875 (Fed. Cir. 1993). Moreover, claims need not "be plain on their face in order to avoid condemnation for indefiniteness; rather, that the claims be amenable to construction, however difficult that task may be." The requirement to "distinctly" claim means that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles. *Union Pac. Res. Co. v. Chesapeake*

Energy Corp., 236 F.3d 684, 692 (Fed. Cir. 2001); *Rosemount, Inc. v. Beckman Instruments, Inc.*, 727 F.2d 1540, 1547 (Fed. Cir. 1984). ***Only when a claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction must a court declare it indefinite***. *Exxon Research & Eng'g Co. v. United States*, 265 F.3d 1371, 1375 (Fed. Cir. 2001). (Emphasis added in all instances.)

As discussed above in connection with the rejection under the first paragraph of 35 U.S.C. § 112, the filed application provides a clear description of normalization and even provides illustrative examples of normalization as claimed. As such, Applicant respectfully submits that one having ordinary skill in the art, having had the benefit of the filed application, would have been apprised of the scope of claims 2-24 as to the term 'normalized' used therein.

Second, the Office Action asserts that claims 17-20 are indefinite "because it is not clear if the configured logic is referring to the same module or different modules of the analyzer." Applicant notes that none of claims 17-20 feature a module, and therefore, the basis of this rejection is unclear. Moreover, the Office Action has not provided any basis of support for the captioned assertion. In particular, the Office Action has failed to show that claim remains insolubly ambiguous without a discernible meaning after all reasonable attempts at construction. Rather, the captioned portion of the Office Action is relied upon by the Examiner in rejecting claims 17-20 for indefiniteness.

Third, the Office Action asserts that claims 17-24 are indefinite "because the claims recite a packet network analyzer system but do not provide any parts that make-up the system." Again, the Office Action fails to provide any basis of support for the asserted rejection. Notably, there is no basis given to support that any and all features of a claim must include the 'parts that make up' the whole. For at least this reason, Applicant respectfully submits that this rejection is improper. This notwithstanding, Applicant notes that Figs. 1-7 show and describe a packet-network analyzer system or components thereof in detail. Therefore, Applicant respectfully submits that the packet-network analyzer system of claims 17-24 when read in light of the specification, must apprise those skilled in the art of the scope of the claim; and that the Office Action has

failed to establish that the claims are insolubly ambiguous without a discernible meaning after all reasonable attempts at construction have been exhausted.

For at least the reason set forth above, Applicant respectfully submits that a *prima facie* case of indefiniteness has not been established in any of the rejections under 35 U.S.C. § 112, ¶ 2. Applicant therefore respectfully request withdrawal of these rejections.

4. Rejection under 35 U.S.C. § 103(a)

A *prima facie* case of obviousness has three requirements. First, the prior art relied upon, coupled with the knowledge generally available in the art at the time of the invention, requires some reason that the skilled artisan would modify a reference or to combine references. *Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.*, 411 F.3d 1332 (Fed. Cir. 2005). The Supreme Court has, however, cautioned against the use of "rigid and mandatory formulas" particularly with regards to finding reasons prompting a person of ordinary skill in the art to combine elements in the way the claimed new invention does. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007). Second, the proposed modification of the prior art must have had a reasonable expectation of success, determined from the vantage point of the skilled artisan at the same time the invention was made. In other words, a hindsight analysis is not allowed. *Amgen, Inc. v. Chugai Pharm. Co.*, 927 F.2d 1200. Lastly, the prior art reference or combination of references must teach or suggest all the limitations of the claims. *In re Wilson*, 424 F.2d 1382 (C.C.P.A. 1970).

In *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727; 82 U.S.P.Q.2D 1385 (2007), the Court stated "A factfinder should be aware, of course, of the distortion caused by hindsight bias and must be cautious of arguments reliant upon *ex post* reasoning. See *Graham v. John Deere Co.*, 383 U.S. 1, 17, 148 USPQ 459, 467 (1966) (warning against a "temptation to read into the prior art the teachings of the invention in issue" and instructing courts to "'guard against slipping into the use of hindsight'" (quoting *Monroe Auto Equipment Co.* v. *Heckethorn Mfg. & Supply Co.*, 332 F.2d 406, 412 (CA6

1964)))." Moreover, if there is no suggestion to combine the teachings of the applied art, other than the use of Applicant' invention as a template for its own reconstruction, a rejection for obviousness is improper. *Ex parte Crawford, et al.* Appeal 20062429, May 30, 2007. In furtherance to the need for the suggestion to combine the teachings of the applied art, it is established that rejections on obviousness grounds cannot be sustained by mere conclusory statements: instead there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. *KSR Int'l v. Teleflex*, 127 S. Ct. at 1741.

a. The rejection of claim 1 in view of *Bonney, et al.*, *Bahadiroglu* and *Barrillaud, et al.*

i. Claim 1

Claim 1 is drawn to a packet-network analyzer system and features:

"*...a host analyzer communicatively coupled to a first client analyzer, wherein the* ***host analyzer incorporates a neural processing module to process raw digital data provided to the host analyzer*** *by the first client analyzer for characterizing a packet-network-under-test that is connected to the first client analyzer.*"

In rejecting claim 1 under 35 U.S.C. § 103(a), the Office Action concedes that *Bonney, et al.* fails to disclose "using a neural processing module to process the information." At the outset, Applicant respectfully submits that this is not what is claimed. Rather, the emphasized portion of claim 1 reveals that the host analyzer incorporates a neural processing module.

The Office Action turns to *Bahadiroglu* in an attempt to cure the deficiency of the primary reference applied in the Office Action. The Office Action states:

"Bahadiroglu discloses a neural processing module **48B** that is used as a part of a network analyzer **48 [figure 6A].**" (Emphasis in original.)

In describing Fig. 6A, at paragraph [0154] the reference states:

"...as illustrated in FIG. 6A, a Collector/Controller (C/C) 20C of the present invention may include or be functionally associated with Network Analyzer 48 for determining the current packet size and inter-packet interval for a given set of current Network Conditions 42 and a current Transfer Request 46. A Network Analyzer 48 may be implemented by a variety of methods and mechanism, depending upon the requirements for a given Collector/Controller (C/C) 20C. Collector/Controller (C/C) 20C may include of be associated with, for example, a Fuzzy Logic Analyzer 48A, a Neural Network 48B or a Combined Analyzer 48C including a Fuzzy Logic Analyzer 48CA and a Neural Network 48CB. Each of these implementations will be discussed below but, as each of these methods are well known to those of ordinary skill in the relevant arts, each will be described only briefly."

Moreover, at paragraph [0157] *Bahadiroglu* discloses:

"Neural Networks 48B, in contrast, are specifically developed and designed as systems that may perform many of the same functions as fuzzy logic systems, that is, generating outputs representing decisions based upon input information, but have the capability of "learning", or of being "trained", both initially and over time."

Thus, Applicant respectfully submits that first, a Neural Network is disclosed and not a neural processing module as specifically claimed. Second, the network analyzer does not incorporate the neural network, let alone a neural processing module. Third, there is no disclosure that the neural network processes raw digital data.

Finally, Applicant respectfully submits that the combination of references is improper. The Office Action asserts that it would have been obvious to one of ordinary skill in the art "to use a neural network to process raw information in Bonney's invention to allow for a more accurate network analysis to be performed.**[Barilland, col. 4, lines 30-40]**" (Emphasis in original.)

First, Applicant respectfully submits that it is not proper to provide a motivation to combine a first reference (*Bonney, et al.*) with a second reference (*Bahadiroglu*) from a third reference (*Barrillaud, et al.*). Moreover, a review of lines 30-40 of *Barrillaud, et al* does not reveal the motivation to combine set forth in the Office Action. Column 4, lines

30-40 of *Bonney, et al.* fail to reveal such a motivation as well. Finally, *Bahadiroglu*, which is a patent publication and has page numbers and not column numbers, describes the benefits of efficient bandwidth and traffic management, but does not disclose or fairly suggest the use of a neural network or neural processing module to effect this desired end. Applicant respectfully submits that the articulated motivation to combine the applied art is without suitable basis and therefore lacks the requisite articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.

Accordingly, and for at least the reasons set forth above, Applicant respectfully submits that rejection fails to establish a *prima facie* case of obviousness for at least the reasons set forth above. As such, claim 1 is patentable over the applied art. Moreover, claims 2-10, which depend immediately or ultimately from claim 1, are also patentable for at least the same reasons and in view of their additionally recited subject matter.

b. Rejection of claims 2-3, 11, 17 and 21 in view of *Bonney, et al.*, *Bahadiroglu* and *Barrillaud, et al.* and *Durrant, et al.*

i. Claim 11

Claim 11 is drawn to a method for analyzing a packet-network-under-test and features:

"... generating a selected data set from the received raw digital data; generating a normalized data set from the selected data set; processing the normalized data set in a neural network to generate a set of rules and relationships; using the set of rules and relationships for mining the selected data set to generate a mined data set; and using the mined data set to characterize the packet-network-under-test."

The Office Action equates the removing of duplicate packets disclosed in *Bonney, et al.* No details in support of this position are provided. Rather, the Office Action implicitly equates the filtering of duplicate packets as normalization. Applicant respectfully demur as no basis is provided for the assertion that filtering duplicate packets

is normalization of data sets, and therefore, the assertion is without merit.

Moreover, Applicant respectfully submits that filtering duplicate packets is not generating normalized data. Applicant respectfully submits that the filtering of packets is not the same as generating a set of normalized data from a selected data set as claimed, but rather a wholly different function. There is no selection of a set of raw digital data and dropping of a packet cannot be construed as normalizing a selected set of data. Moreover, Applicants note that the specification of the filed application states, "Normalization is typically implemented to accommodate a wide range of dynamic values that may occur when selected subsets of data are obtained from multiple sources." *See* paragraph [0034]. Further, "the normalization process specifies a lower bound and an upper bound of values for the parameter of interest in the subsets of data, such subsets having been received from one or more PNUTs that require characterization." *See* paragraph [0035]. Thus, normalizing provides compatibility among parameters from subsets of data, *e.g.*, obtained from multiple sources or networks. This is not taught by the agents 4 of *Bonney, et al.*

Therefore, *Bonney* fails to disclose at least one feature of claim 11. Accordingly, and for at least the reasons set forth above, Applicant respectfully submits that rejection fails to establish a *prima facie* case of obviousness at least because the applied art fails teach or suggest all the limitations of claim 11. As such, claim 11 is patentable over the applied art. Moreover, claims 12-16, which depend immediately or ultimately from claim 11, are also patentable for at least the same reasons and in view of their additionally recited subject matter.

Moreover, the Office Action does not clearly set forth a clearly articulated motivation to combine *Bonney, et al.* and *Bahadiroglu* in rejecting claims 2-3, 11, 17 and 21. Applicant respectfully submits that if their assumption is correct that the motivation for this combination is the same as set forth in the rejection of claim 1, this combination is improper for at least the same reasons set forth above.

iii. Claims 17 and 21

Claim 17 is drawn to a packet-network analyzer system stored on a computer-readable medium and features:

" ... logic configured to generate a selected data set from raw digital data of the packet-network-under-test; logic configured to generate a normalized data set from the selected data set; logic configured to process the normalized data set in a neural network to generate a set of rules and relationships; logic configured to use the set of rules and relationships for mining the selected data set to generate a mined data set; and logic configured to use the mined data set to characterize the packet-network-under-test. method for analyzing a packet-network-under-test."

Claim 21 is drawn to a packet-network analyzer system stored on a computer-readable medium and features:

" ... means for generating a selected data set from raw digital data of the packet-network-under-test; means for generating a normalized data set from the selected data set; means for processing the normalized data set using a neural network to generate a set of rules and relationships; means for using the set of rules and relationships for mining the selected data set to generate a mined data set; and means for using the mined data set to characterize the packet-network-under-test."

The Office Action rejects claims 17 and 21 on essentially the same grounds as the rejection of claim 11. Accordingly, Applicant respectfully submits that the rejection of claims 17 and 21 are improper for at least the same reasons as discussed above. As such, claims 17 and 21 are patentable over the applied art. Moreover, claims 12-16 and 22-24 are patentable for at least the same reasons and in view of their additionally recited subject matter.

c. Rejection of Claim 4-5 under 35 U.S.C. § 103(a)

While Applicant in no way concede the propriety of the rejection of claims 4 and 5, in view of their dependence on claim 1, claims 4 and 5 are patentable for at least the same reasons as claim 1 set forth above.

d. Rejection of Claim 6-10 under 35 U.S.C. § 103(a)

While Applicant in no way concede the propriety of the rejection of claims 6-10, in view of their dependence on claim 1, claims 6-10 are patentable for at least the same reasons as claim 1 set forth above.

e. Rejection of claims 19-20 and 23-24 under 35 U.S.C. § 103(a)

While Applicant in no way concede the propriety of the rejection of claims 19-20 and 23-24, in view of their dependence on claims 17 and 21, respectively, claims 19-20 and 23-24 are patentable for at least the same reasons as are their respective claims 17 and 21 set forth above.

8. Conclusion

In view of the foregoing, Applicant respectfully requests: the withdrawal of all objections and rejections of record; the allowance of all pending claims; and the holding of the application in condition for allowance.

Respectfully submitted on behalf of:
Agilent Technologies, Inc.

/William S. Francos/

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Appendix

Claims on Appeal

1. A packet-network analyzer system comprising a host analyzer communicatively coupled to a first client analyzer, wherein the host analyzer incorporates a neural processing module to process raw digital data provided to the host analyzer by the first client analyzer for characterizing a packet-network-under-test that is connected to the first client analyzer.

2. The packet-network analyzer system of claim 1, wherein the host analyzer comprises:

a data collection element that receives the raw digital data from the first client analyzer;

a data selection element that generates a selected data set from the raw digital data;

a data processing element that processes the selected data set to generate a normalized data set;

wherein the neural processing module that processes the normalized data set to generate a set of rules and relationships; and

a data mining module that uses the set of rules and relationships to generate a mined data set from the selected data set, wherein the mined data set is used to characterize the packet-network-under-test.

3. The packet-network analyzer of claim 2, wherein the neural processing module comprises a fast neural classifier that is derived from ART.

4. The packet-network analyzer of claim 3, wherein the neural processing module further comprises a rules and relationship extraction module that uses a modified CHAID scheme.

5. The packet-network analyzer system of claim 2, wherein the neural processing module processes the normalized data set using ART, and the set of rules and

relationships is generated by the neural processing module using a modified CHAID scheme.

6. The packet-network analyzer system of claim 5, wherein the first client analyzer uses XML to transport the raw digital data of the packet-network-under-test to the data collection element.

7. The packet-network analyzer system of claim 6, wherein the packet-network-under-test is an IP network.

8. The packet-network analyzer system of claim 6, wherein the packet-network-under-test is a subnet of the Internet.

9. The packet-network analyzer system of claim 2, wherein the data collection element of the host analyzer comprises a HTTP server using XML to communicatively couple the host analyzer via a packet network to the first client analyzer, and wherein the first client analyzer uses XML to transport the raw digital data of the packet-network-under-test to the host analyzer.

10. The packet-network analyzer system of claim 7, wherein the host analyzer is communicatively coupled to a second client analyzer that is communicatively coupled via a packet network to a third client analyzer, and wherein the third client analyzer uses XML over HTTP to transmit raw digital data to the second client analyzer for characterizing a second packet-network-under-test that is connected to the third client analyzer.

11. A method for analyzing a packet-network-under-test, comprising:
receiving raw digital data that is derived from a packet-network-under-test;
generating a selected data set from the received raw digital data;

generating a normalized data set from the selected data set;

processing the normalized data set in a neural network to generate a set of rules and relationships;

using the set of rules and relationships for mining the selected data set to generate a mined data set; and

using the mined data set to characterize the packet-network-under-test.

12. The method of claim 11, wherein the step of receiving raw digital data incorporates the use of XML over HTTP as a transmission protocol.

13. The method of claim 12, wherein the normalized data set is generated using ART, and the set of rules and relationships is generated using a modified CHAID scheme.

14. The method of claim 13, wherein characterizing the packet-network-under-test comprises generating a performance metric of transmission of data packets through the packet-network-under-test.

15. The method of claim 14, wherein the packet-network-under-test is an IP network.

16. The method of claim 14, wherein the packet-network-under-test is a subnet of the Internet.

17. A packet-network analyzer system stored on a computer-readable medium, the analyzer comprising:

logic configured to receive raw digital data that is derived from a packet-network-under-test;

logic configured to generate a selected data set from raw digital data of the packet-network-under-test;

logic configured to generate a normalized data set from the selected data set;

logic configured to process the normalized data set in a neural network to generate a set of rules and relationships;

logic configured to use the set of rules and relationships for mining the selected data set to generate a mined data set; and

logic configured to use the mined data set to characterize the packet-network-under-test.

18. The analyzer system of claim 17, wherein the logic configured to receive raw digital data incorporates the use of XML over HTTP as a transmission protocol.

19. The analyzer system of claim 18, wherein the logic configured to generate the normalized data set uses ART, and the logic configured to process the normalized data set in the neural network uses a modified CHAID scheme.

20. The analyzer system of claim 19 wherein the logic configured to receive raw digital data incorporates logic to interface to the Internet.

21. A packet-network analyzer system stored on a computer-readable medium, the analyzer comprising:

means for receiving raw digital data that is derived from a packet-network-under-test;

means for generating a selected data set from raw digital data of the packet-network-under-test;

means for generating a normalized data set from the selected data set;

means for processing the normalized data set using a neural network to generate a set of rules and relationships;

means for using the set of rules and relationships for mining the selected data set to generate a mined data set; and

means for using the mined data set to characterize the packet-network-under-test.

22. The analyzer system of claim 21, wherein the means for receiving raw digital data incorporates the use of XML over HTTP as a transmission protocol.

23. The analyzer system of claim 22, wherein the means for generating the normalized data set uses ART, and the means for processing the normalized data set using the neural network uses a modified CHAID scheme.

24. The analyzer system of claim 23, wherein the means for receiving raw digital data incorporates means to interface to the Internet.

Appendix

Evidence (None)

Appendix

Related Proceedings (None)